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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/384,419	08/27/1999	GRAHAM BANK	85874/136	7815

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EXAMINER

NI, SUHAN

ART UNIT

PAPER NUMBER

2643

DATE MAILED: 09/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

HG

Office Action Summary

Application No.

09/384,419

Applicant(s)

BANK ET AL.

Examiner

Suhan Ni

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-27 and 33-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5-27 and 33-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

1. This communication is responsive to the applicants' amendment dated 07/10/2002.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the feature of "suspension acts as a pivot" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1, 3, 5-27 and 33-39 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over the claims of U.S. Patent 6,332,029. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1 of U.S. Patent 6,332,029 is similar in scope to at least claims 1 and 34 of U.S. Patent Application (09/384,419) with obvious wording variations. For example:

Regarding claim 1, U.S. Patent 6,332,029 claims a panel-form loudspeaker comprising: a resonant panel-form member (in claim 1) and a vibration exciting system (in claim 1) on the panel-form member and adapted to apply bending wave energy thereto to cause the panel-form member to produce an acoustic output, wherein the vibration exciting system is adapted to apply torsion to the panel-form member (claim 1, 6-7) as claimed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) The invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

4. Claims 1, 3, 5-13, 16-21, 24-27 and 33-39 are rejected under 35 U.S.C. 102(e) as being anticipated by Azima et al. (US-6,332,029).

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Regarding claim 1, Azima discloses a panel-form loudspeaker (81) comprising: a resonant panel-form member (2) and a vibration exciting system (9) on the panel-form member and adapted to apply bending wave energy thereto to cause the panel-form member to produce an acoustic output, wherein the vibration exciting system is adapted to apply torsion to the panel-form member (Figs. 1 and 18-21) as claimed.

Regarding claims 3 and 33, Azima further discloses the panel-form loudspeaker, wherein the vibration exciter/exciting system is adapted to the resonant panel for applying torsion and shear thereto (Fig. 3), and said vibration exciting system is coupled to the panel to span a plurality of nodal lines in the panel (Figs. 3-7).

Regarding claims 5-6 and 35-39, Azima further discloses the panel-form loudspeaker, wherein the vibration exciting system comprises a suspension (3) on which the panel is mounted as claimed (col. 26, line 12 – col. 27, line 6).

Regarding claims 7-8, 10-13, 16 and 24-27, Azima further discloses the panel-form loudspeaker, that the vibration exciter/exciting system comprises a piezoelectric device attached to a face of the panel (Figs. 18-22).

Regarding claim 9, Azima further discloses the panel-form loudspeaker, wherein the piezoelectric device comprises a mirror-image elements (Fig. 15) as claimed.

Regarding claims 17-21, Azima further discloses that, the vibration exciting system comprises an inertial device (9), which has an inertial mass (25) and is an inertial vibration exciter (27) as claimed (Figs. 14-17).

Regarding claim 34, Azima discloses a loudspeaker comprising a panel-form member (2) mounted on a suspension (3) and a vibration exciter (9) mounted on the panel-form member, wherein the vibration exciter is adapted to apply bending wave energy to the panel-form member

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for causing acoustic resonance (Fig. 1), the suspension acts as a pivot for supporting the panel-form member in a simple fashion and causing nodal lines corresponding to the resonance of the panel-form member to move towards an edge of the member (Figs. 18-21, 26, 28, 30) as claimed.

5. Claims 1 and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Parrella et al. (US-5,901,231).

Regarding claim 1, Parrella et al. disclose a panel-form loudspeaker (81) comprising: a resonant panel-form member (36) and a vibration exciting system (37, 38) on the panel-form member and adapted to apply bending wave energy thereto to cause the panel-form member to produce an acoustic output, wherein the vibration exciting system is adapted to apply torsion to the panel-form member (Figs. 6 and 9-11) as claimed.

Regarding claim 23, Parrella et al. further disclose the panel-form loudspeaker, wherein the vibrating exciting system comprising a bimorph piezoelectric device (37, 38, 74-77 and 80-83), which is generally rectangular and orientated diagonally to act as a twister (Figs. 6 and 9-11).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parrella et al. (US-5,901,231).

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Regarding claim 22, Parrella et al. do not clearly teach a motor driver as claimed. Since providing a motor driver for a vibrating panel of a panel speaker is very well known in the art, it therefore would have been obvious to one skilled in the art at the time the invention was made to provide a motor driver for a vibrating panel of a panel speaker as an alternate choice, for providing certain acoustic effect, or noticeable mechanical vibration.

Allowable Subject Matter

7. Claims 14-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Amendment

8. Applicants' arguments dated 07/10/2002 have been fully considered, but they are not deemed to be persuasive.

Regarding rejection of claims rejected under 35 U.S.C. 102(e) as being anticipated by Azima (US-6,332,029), the examiner respectfully disagrees with the applicants. The cited reference does clearly show a panel-form loudspeaker comprising: a resonant panel-form member (2) and a vibration exciting system (9) on the panel-form member and adapted to apply bending wave energy thereto to cause the panel-form member to produce an acoustic output, wherein the vibration exciting system is adapted to apply torsion to the panel-form member (Figs. 1 and 18-21) as claimed.

Moreover, in Figure 1, Azima clearly teaches a panel-form **loudspeaker** (81) comprises a rectangular frame (1) carrying a resilient suspension (3) around its inner periphery which supports a distributed mode sound radiating panel (2). A transducer (9) is mounted wholly and

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exclusively on or in the panel (2) at a predetermined location define by dimensions x and y. The latter are, of course the proportionate side length coordinates (from any corner) as indicated above. Conversion to being center-related coordinates could be of general value, e.g. where corners of the panel member (2) are trimmed or cropped or finished short as made, see dashed (2d) and above regarding refinement of acoustic action/performance. Alternative, or combiningly and cooperatingly, effectively analogous such refinement by prescribing diagonal bending stiffness is also indicated diagrammatically, see arrows (V, W). The transducer (9) serves to launch or excite **bending waves** in the panel to cause the panel to resonate and radiate an acoustic output. Based on the structure of a rectangular shape configured diaphragm with an off-center mounted transducer, the bending waves applied to the diaphragm by the transducer to all directions, such as four corners, are varying and different. Therefore, twisting force exists on the diaphragm, and torsion occurs. Further in Figure 21, Azima even more clearly shows the twisting force by providing two transducers for the diaphragm.

Regarding the issue of suspension, the examiner respectfully disagrees with the applicants. The portion of the suspension stationaryly connected to frame (Figs. 5b and 40) acts as a pivotal center when the diaphragm vibrates.

Regarding rejection of claims rejected under 35 U.S.C. 102(e) as being anticipated by Parrella et al. (US-5,901,231), the examiner respectfully disagrees with the applicants. The cited prior art discloses a panel-form loudspeaker comprising: a resonant panel-form member (36) and a vibration exciting system (37, 38) on the panel-form member as claimed. Because the shape of the diaphragm and the transducers mounting locations, the reason for torsion mentioned above also applies.

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Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Suhan Ni** whose telephone number is (703)-308-9322, and the number for fax machine is (703)-305-9508. If it is necessary, the examiner's supervisor, **Curtis Kuntz**, can be reached at (703) 305-4708.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is (703) 305-3900.

SN

Suhan Ni

September 16, 2002

SUHAN NI
PATENT EXAMINER